

polyradiculoneuropathy of subacute onset, seems to be more in keeping with an immunologically induced demyelination.

I thank Dr E C Hutchinson, North Staffordshire Royal Infirmary, for his permission to report this case.

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Pregnancy attributable to interaction between tetracycline and oral contraceptives

Various drugs, including antibiotics, may cause failure of contraception and breakthrough bleeding in patients on oral contraceptives.¹ Early reports implicated rifampicin,² which was later shown to increase the rate of hepatic metabolism of ethinylloestradiol and norethisterone.¹ There have been three cases of pregnancy in women taking ampicillin.³ We cannot find any report of either breakthrough bleeding or pregnancy attributable to tetracycline in a woman taking oral contraceptives. We report such a case.

Case history

The patient, a 20-year-old student, had been taking oral contraceptives for four years. Her only complaint had been of an increase in left-sided headaches. For the last two years she had taken Microgynon 30 (ethinylloestradiol 30 µg, norgestrel 150 µg) and had had no breakthrough bleeding. On 16 October 1978 she had a normal withdrawal bleed. On 20 October she started the next course of Microgynon and also (for sinusitis) a five-day course of tetracycline 500 mg six hourly for three days and 250 mg six hourly for two days. She completed the course on the 24 October. She did not forget to take her oral contraceptive. She had no diarrhoea or vomiting but had only a very light two-day withdrawal bleed on 14 and 15 November 1978. She continued to take her oral contraceptive for a further two months until seen at the family planning clinic on 8 January 1979. Her uterus was then the size of at least a 12-week pregnancy. This would have corresponded with a previous menstrual period on about the 15 October, and indicated that she must have ovulated either when she was taking the tetracycline or in the week after. Termination confirmed the clinical assessment of the duration of pregnancy.

Comment

The time course of this history in a woman who had been taking oral contraceptives for four years with no problems strongly suggests that the tetracycline contributed to the failure in contraception. In addition to the reports of pregnancies associated with rifampicin² and ampicillin,³ pregnancies have been reported in two women taking either sulphamethoxypyridazine or chloramphenicol⁴ and also an increased incidence of breakthrough bleeding in women on phenoxymethylpenicillin, neomycin, or nitrofurantoin.¹ The mechanism of the interaction is unknown but a decrease in urinary oestriol output has been noted in pregnant women taking ampicillin,⁵ phenoxymethylpenicillin, or neomycin.¹ Therefore the enterohepatic circulation of contraceptive steroids may be interrupted by inhibition of the gut bacteria normally responsible for hydrolysis of steroid conjugates.⁴ This would result in lower-than-normal concentrations of circulating steroids. There seems no reason why tetracycline should not cause a similar change.

With the widespread use of low-dose oestrogen contraceptives such interactions may well occur more often. Tetracyclines are used for a wide range of infections including pelvic inflammatory disease and non-specific urethritis. One of us has seen a second case of breakthrough bleeding associated with a course of tetracycline. We therefore think that doctors should be aware of the potential problem. We would advise that women taking low-dose oral contraceptives should take extra precautions against conceiving in any cycle during which antibiotics are given.

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Diet and ulcerative colitis

The apparent rarity of ulcerative colitis in developing countries together with the ability of dietary fibre to affect colonic function and bacterial metabolism have led to suspicions that a low intake of fibre may be a causal factor in this disease.^{1,2} People who develop Crohn's disease (a closely related condition) show significant differences in diet from matched controls, eating less raw fruit and vegetable fibre and more refined sugar.³ To investigate whether ulcerative colitis is preceded by an unusual diet we have compared the diet before illness of patients with newly diagnosed colitis with that of closely matched, healthy subjects.

Subjects, methods, and results

Thirty consecutive newly diagnosed patients (17 men, 13 women) were studied. The diagnosis of ulcerative colitis was based on the findings of barium radiology, sigmoidoscopy, and rectal biopsy. In 10 patients the disease extended proximal to the splenic flexure, in five it was limited to the rectum, and in the remaining 15 it was of intermediate extent. The median duration of symptoms before diagnosis was two months (range 1-18).

All patients were interviewed within three months of diagnosis. A single dietician used the dietary history method⁴ to question each patient about his or her habitual diet before illness. Using a specially designed questionnaire, she determined the frequency of consumption and size of helpings of each of a comprehensive range of foods and drinks.³ The data were analysed to determine the average daily intake of different food components with the use of a computer programme compiled from McCance and Widdowson's food tables.⁵

Dietary intake of 30 patients with ulcerative colitis before their illness and that of 30 matched, healthy controls. Results given in g/day as means \pm SE of mean unless stated otherwise

	Patients	Controls
Total dietary fibre	19.9 \pm 1.1	18.3 \pm 1.2
Cereal fibre*	8.6	7.2
Total fruit and vegetable fibre	10.1 \pm 0.6	10.5 \pm 0.8
Raw fruit and vegetable fibre	1.4 \pm 0.2	1.4 \pm 0.2
Refined sugar	96 \pm 9	97 \pm 9
Total carbohydrate	291 \pm 20	269 \pm 16
Protein	78 \pm 4	82 \pm 3
Fat	109 \pm 7	106 \pm 5
Energy (MJ/day)	10.2 \pm 0.6	10.0 \pm 0.5

*Median value.

Conversion: SI to traditional units—Energy: 4.2 MJ \approx 1000 kcal.